TITLE: EVALUATION OF THE ANTI-INFLAMMATORY ACTIVITY OF THE FREEZE-DRIED EXTRACT OF PAENIBACILLUS POLYMYXA RNC-D STRAIN ISOLATED FROM THE SPECIES PRUNUS SP. (SAVANA)

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ABSTRACT:

Non-steroidal anti-inflammatory drugs have a positive impact on the patient's quality of life. However, its exacerbated use offers risks such as gastrointestinal reactions, duodenal and gastric ulcers. Thus, it is necessary to search for new molecules with new mechanisms in the anti-inflammatory action, in order to reduce or even eliminate cited side effects. Since the first endophytic was identified, great attention has been given to the exploration of new substances that can be synthesized by them. This ability is relevant because it provides an alternative to the exploration of slow-growing plants, thus helping to preserve biodiversity, reducing market value and facilitating the production of such substances. The aimed of this study, using the paw edema model, it was to verify the profile of the anti-inflammatory effect by the reduction of paw diameter, temperature analysis and quantification of leukocytes in Balb/c mice in the edema model after carrageenan. Our goal was also evaluated the bioactivity of the extract produced by *Paenibacillus polymyxa* in the control of acute inflammation in this model. Regarding the diameter of the paws for the groups treated with celecoxib, it was observed edema reduction of 0.7 ± 0.1 mm and those treated with the *Paenibacillus polymyxa* extract the reduction was 1.0 ± 0.1 mm. For the analysis of temperature, the groups did not have differences between them, showing decreases up to 2.0 ± 0.3 ºC after the treatments. In the total cell count, both treated groups presented reduction of the cellular number in relation to the positive control. Therefore, it can be suggested that the extract used in the concentration of 5mg.mL-1 seems to have a greater efficacy in relation to the control of acute inflammation when compared to the commercial treatment.

Keywords: endophytic microorganisms, inflammation, paw edema.

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